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Two new species of *Stachybotrys* from soil

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Abstract — Two new species of *Stachybotrys, S. nielamuensis* and *S. zhangmuensis* both from soil in China, are described and illustrated. The type specimens (dried cultures) and living cultures are deposited in the Herbarium of Shandong Agricultural University Plant Pathology (HSAUP). Isotypes are kept in the Herbarium of Institute of Microbiology, Academia Sinica (HMAS).

Key words — taxonomy, soil fungi, dematiaceous hyphomycetes

Introduction

Stachybotrys Corda was erected in 1837, and since then 92 epithets have been proposed in the genus (indexfungorum.org/Names/Names_asp). This genus is characterized by distinct, mononematous conidiophores bearing an apical cluster of several swollen phialides producing unicellular phialoconidia that become aggregated in globose masses. In the course of a survey of soil dematiaceous hyphomycetes in China, several unusual species of *Stachybotrys* were collected. Two of them are described here as new species, *S. nielamuensis* and *S. zhangmuensis*.

Taxonomic descriptions

Stachybotrys nielamuensis Y.M. Wu & T.Y. Zhang, **sp. nov**. FIGURE 1

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Coloniae in CMA effusae, atrogriseae vel nigrae. Hyphis ramosis, septatis, laevibus, hyalinis vel subhyalinis, 1.5–2.5 µm crassis. Conidiophora recta vel leviter curvata, 2–6-septata, hyalina, laevia, 200–250 µm longa, ad basim 12–15 µm diam. Phialides 6–8 ad apicem conidiophori productae, hyalinae, laevia, 13–15 × 6–8 µm. Conidia clavata vel oblonga, griseo-brunnea, tuberculata, 11–16 × 6–9 µm.

Holotype: from forest soil, Nielamu, Tibet, China, altitude 2500 m, 14 Sept. 2007, Y.M. Wu, HSAUPII$_{07}$1334, **holotype** (HMAS 196254, isotype).

Etymology: in reference to the type location.

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Fig. 1 Conidia and conidiophores of *Stachybotrys nielamuensis* (ex holotype; bars = 20 μm). Left: drawings; right: photomicrographs.

Colonies on CMA (cornmeal agar) at 25°C for 21 days 4–6 cm diam., effuse, darkish grey to black. Mycelium mostly superficial, partly immersed. Hyphae branched, septate, smooth, hyaline to subhyaline, 1.5–2.5 μm wide. Conidiophores straight or slightly curved, unbranched or rarely branched, 2–6-septate, hyaline, smooth, 200–250 μm long, swollen at the basal cell up to 12–15 μm wide. Phialides borne in groups of 6–8 at the apices of conidiophores, hyaline, smooth, 13–15 × 6–8 μm. Conidia clavate or oblong, obviously tuberculate, 0-septate, greyish brown, 11–16 × 6–9 μm.

In conidial morphology *Stachybotrys nielamuensis* somewhat resembles *S. kampalensis* Hansf. (Hansford 1943), *S. freycinetiae* McKenzie (McKenzie 1991), and *S. verrucispora* Matsush. (Matsushima 1985). However *S. kampalensis* and *S. freycinetiae* have hyaline to olivaceous conidiophores and smaller conidia (the former 9–13 × 6–7 μm, the latter 11–13 × 4–4.5 μm). *S. verrucispora* has pale brown conidiophores and phialides, and shorter but wider (10–15 × 9.5–11 μm) conidia.

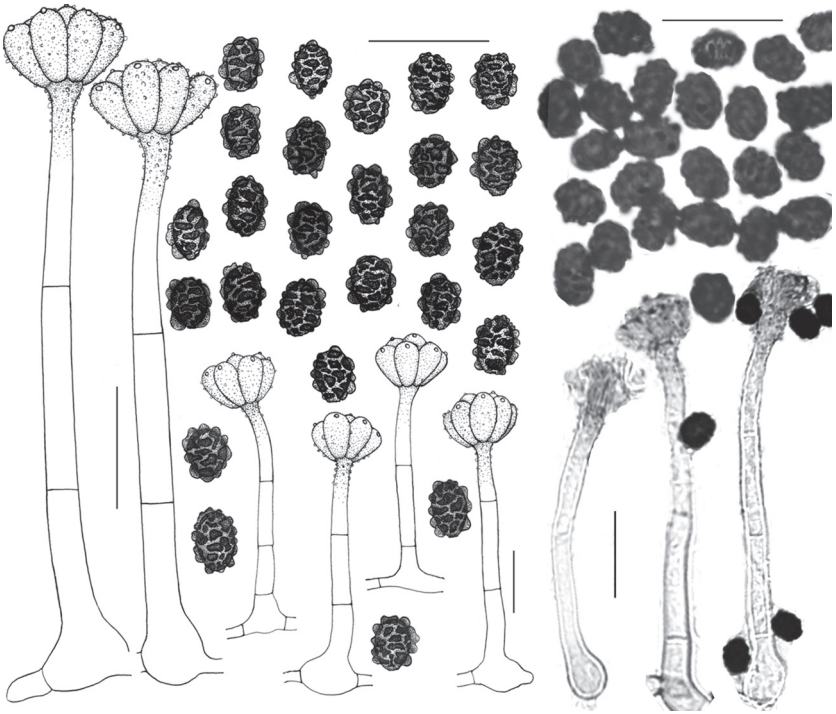

Fig. 2 Conidia and conidiophores of *Stachybotrys zhangmuensis* (ex holotype; bars = 20 µm). Left: drawings; right: photomicrographs.

Stachybotrys zhangmuensis Y.M. Wu & T.Y. Zhang, **sp. nov.** FIGURE 2

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Coloniae in CMA effusae, atrogriseae vel nigrae. Hyphis ramosis, septatis, laevibus, hyalinis vel subhyalinis, 1.5–2 µm crassis. Conidiophora erecta, recta vel leviter curvata, 1–3-septata, basi subhyalina, supra griseo-brunnea, verrucosa, interdum granulistecta, 100–120 µm longa, ad basim 6–9 µm diam. Phialides 6–7 ad apicem conidiophori productae, olivaceo-griseae, verrucosae, 8–12 × 5–6 µm. Conidia ovoidea, ellipsoidea, vel oblonga, continua, griseo-brunnea, tuberculata, 8–9.5 × 6–7 µm.

Holotype: from forest soil, Zhangmu, Tibet, China, altitude 2300 m, 11 Sept. 2007, Y.M. Wu, $HSAUPII_{07}1346$, **holotype** (HMAS 196255, isotype).

Etymology: in reference to the type location.

Colonies on CMA at 25°C for 21 days 5–8 cm diam., effuse, darkish grey to black. Mycelium mostly superficial, partly immersed. Hyphae branched, septate, smooth, hyaline to subhyaline, 1.5–2 µm wide. Conidiophores straight or slightly curved, unbranched or rarely branched, 1–3-septate, subhyaline near the base, greyish brown above, verrucose, covered with large granules, 100–120 µm long, 6–9 µm wide near the base. Phialides borne in groups of

6–7 at the apices of conidiophores, pale olive-grey, verrucose, 8–12 × 5–6 μm. Conidia ovoid, ellipsoid or oblong, tuberculate, 0-septate, greyish brown, 8–9.5 × 6–7 μm.

Stachybotrys zhangmuensis somewhat resembles *S. chartarum* (Ehrenb.) S. Hughes (Hughes 1958) and *S. microspora* (B.L. Mathur & Sankhla) S.C. Jong & E.E. Davis (Jong & Davis 1976) in conidial colour and size, but *S. zhangmuensis* has more obviously tuberculate conidia, otherwise bigger than *S. microspora* (6–8 × 4–5 μm), and wider than *S. chartarum* (7–12 × 4–6 μm).

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